C.B. 4-WATT, 6-CHANNEL WALKIE-TALKIE

TRC-208

OWNER'S MANUEL

PLEASE READ BEFORE USING THIS EQUIPMENT

REALISTIC®*

21-1651

*TRADEMARKS OF RADIO SHACK DIVISION, TANDY CORPORATION

Your **Realistic TRC-208** belongs to the latest generation in our famous line of walkie-talkie styled CB transceivers. Realistic's unique Range-Boost side panels couple your body to the antenna system for increased signal power on receive and transmit.

The all-solid state circuit incorporates many more special features you can't see—but they sure make a difference in the performance!

* Ceramic filter for superior selectivity and freedom from adjacent channel interference
* Automatic Modulation Control for a constant RF modulation level
* Automatic Gain Control for a constant sound level from weak and strong signals
* Low-distortion IC audio circuit
* Built-in Automatic Noise Limiter to reduce pulse-type noise
* Semiconductor complement: 1 IC, 14 transistors, 16 Diodes

There are plenty of controls for top performance and convenience, too:

* High/Low power switch lets you reduce your power output (and battery drain) for short-range transmissions
* Battery condition/RF power meter
* Separate built-in condenser mic and speaker
* Center-loaded telescopic antenna
* Jacks for external power source, battery charger, push-to-talk mic, speaker, and even for an external CB antenna (all optional extra)
* Equipped with crystals for operation on Channel 14—add crystals for up to five more channels

For your own protection, we urge you to record the Serial Number of this unit in the space provided. You'll find the Serial Number on the bottom of the cabinet of the unit.

Serial Number

DOC LICENSE (CANADA)

Before transmitting with your Transceiver, you must obtain a Department of Communications (DOC) General Radio Service license. We've provided such an application form with your unit: complete the form and mail with the appropriate fee to the Radio Regulations Office nearest you.

DOC Approved Number: 255 365 518

NOTE: Units manufactured for sale and use in Canada are not identical to units type-accepted by the FCC. Canadian models have been approved by DOC and are to be used only in Canada.

FCC LICENSE (USA)

Before transmitting with your Transceiver, you must have an FCC Class D Citizens Radio Service License. If you don't have a license yet, you can fill out the Temporary Permit Form 555-B for a temporary license. Also, fill out and mail in FCC Form 505 CB License Application to:

Federal Communications Commission
P.O. Box 1010
Gettysburg, Penn. 17326

There is no license fee for either type of FCC CB License.

You must also read and know Part 95 of the FCC Rules and Regulations: they apply to the operation of a Class D Citizens Band unit.

NOTE: Units manufactured for sale and use in the USA are type accepted by the Federal Communications Commission and are not to be sold or used in Canada (they have not been approved by DOC).

BEFORE YOU CALL FOR HELP...

Our repair centers receive many returned products which are actually **working perfectly**. Maybe the owner just didn't read the instructions, or overlooked something. Perhaps the problem was merely weak batteries!

So read this manual carefully and be sure **you** understand all the basic features of this Transceiver—and the special ones, too! And before you assume it needs repair, refer to the Service and Maintenance section of this manual, to see if the problem is something ***you*** can eliminate.

Enjoy your Realistic TRC-208!

SPECIFICATIONS

RECEIVER

Frequency Coverage	Any 6 of the 40 CB channels Supplied with Channel 14 crystal (27.125 MHz)
Sensitivity	0.5μV for 10 dB (S+N)/N
Selectivity	±3kHz at −6dB
Adjacent Channel Rejection	90dB
Audio Distortion at 1000Hz	Less than 10% at 2 watts output (8Ω)
I.F.	455 kHz
Squelch	Adjustable from 0.5μV

TRANSMITTER

Frequency Coverage	Any 6 of the 40 CB channels Supplied with Channel 14 crystal (27.125 MHz)
Power Output	3.5 watts in HI Power Position 1.5 watts in LOW Power Position
Modulation	90%—100%
Spurious Output	−60 dB or better
Emission	6A3
Frequency Tolerance	0.002%
Current Drain (12.5V DC)	30—1400mA (from no-signal receive, to full modulation on transmit)

GENERAL

Power Requirements:

8 type AA Penlight Cells (or 10 rechargeable Ni-Cad cells)

12 Volts DC, with external adapter. Rechargeable Ni-Cads can be charged while in the unit, using an external Charger/Adapter and the CHG Jack.

Speaker:

2¼" 5.7cm permanent magnet dynamic type

Microphone:

Built-in electret-condenser type with FET amplifier

Provision for external Mic with Push-to-Talk capability via the 5-pin DIN Jack

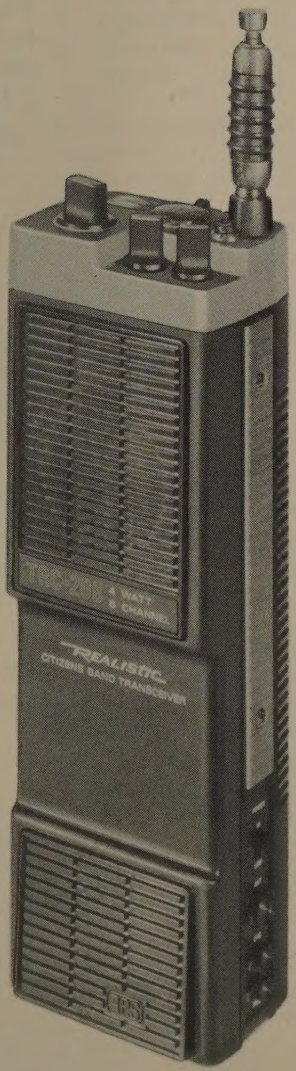
Meter:

Provides indication of Battery Condition in Receive Mode

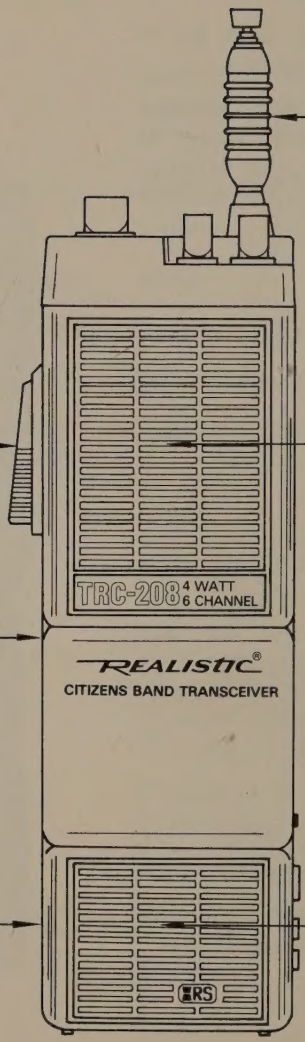
Provides indication of relative RF power output in Transmit Mode

Antenna:

Built-in center-loaded telescopic



CONTROLS



Antenna
Extend fully.

Talk Button
Press to transmit.
Release to listen.

Built-in Dynamic Speaker
Listen here.

Range Boost Side Panels
for extended range (body functions as part of antenna system).

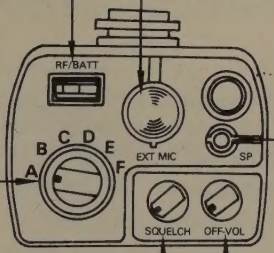
Battery Compartment
Load batteries as noted on page 8.

Built-in Electret Condenser Microphone
Talk here.

RF/BATTery Meter
Indicates condition of Batteries when Receiving. Shows relative RF Power when Transmitting.

Channel Selector
Select any one of 6 Channels (depending on Crystals installed). Comes with crystals for channel 14 in position A.

SQUELCH Control
Adjust to eliminate background noise.



OFF—VOLume Control
Turn clockwise to apply power. Adjust for desired listening level.

EXTernal MIC Jack
Connect external Mic here (5-pin DIN plug). Can be used with Push-to-Talk mics. Built-in Mic is automatically disconnected.

External SPeaker Jack
Connect external speaker or earphone (8-16 ohm impedance). Internal speaker is automatically disconnected.

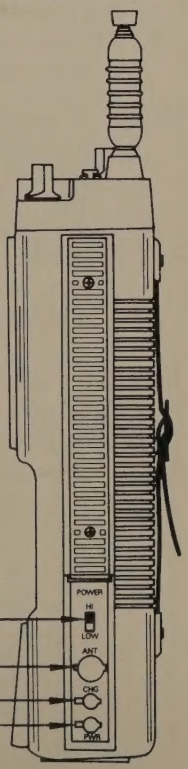
HI/LOW POWER Switch
Switch to LOW when transmitting a short distance and/or to conserve batteries.

ANT Jack
Connect external antenna (50 ohm) here for mobile or base use—or just to extend range.
Keep telescopic antenna collapsed.

CHG Jack
Connect charger (such as Radio Shack Catalog Number 21-516) to recharge Nickel Cadmium batteries while they're in the unit.

NOTE: Do not attempt to operate unit while batteries are being recharged.

PWR Jack
Connect a 12-volt DC source (Radio Shack 270-1533). Batteries will be automatically disconnected.



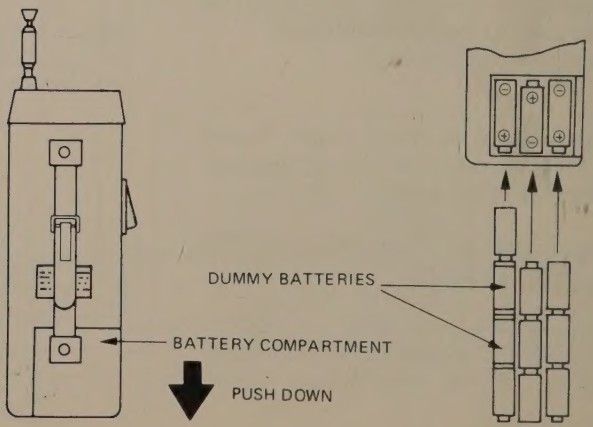
PREPARING FOR USE

1. Remove the Battery Compartment Cover as shown below.
2. You can use the following types of batteries (size AA "penlight").

Description	Quantity Required
Rechargeable Nickel Cadmium (1.25 volts)	10
Alkaline type (1.5 volts)	8
Standard type (1.5 volts)	8

3. Install batteries **with polarity as shown in the Compartment.**
4. **If you are using Alkaline or standard type AA "penlight" batteries, use the dummy batteries as shown.**
5. Check battery condition as follows:
   A. Turn power "on" by rotating **VOLume** clockwise.
   B. If Meter reads in the blue range, the batteries are OK. Batteries need to be recharged or replaced if meter reads in the red range.

NOTE: Ni-Cad batteries are typically in a discharged condition when they come from a store. Therefore, if you are using Ni-Cad's, you will probably have to charge them before using your Walkie-Talkie. The best way to do this is to charge them in the set, using the Radio Shack Battery Charger designed for this unit (Catalog Number 21-516). Plug it into the **CHG** Jack on the side of the unit; connect the other end to a source of 120 volts, 60 Hz AC power (standard AC power).

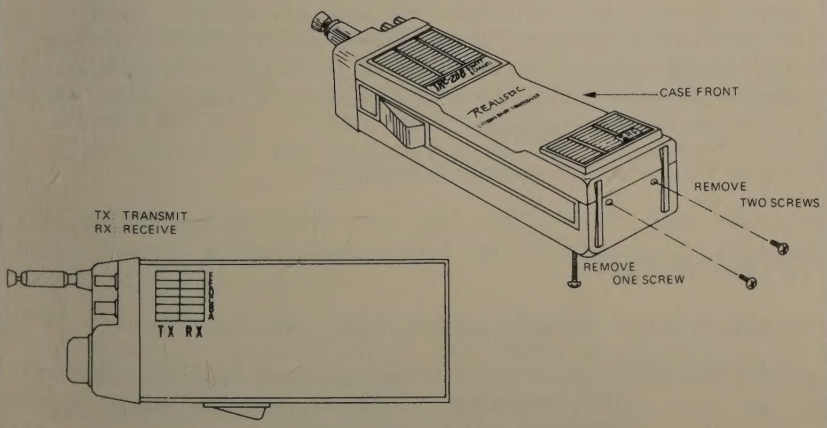


ADDING OR CHANGING CRYSTALS

Your TRC-208 comes with Channel 14 crystals installed in Channel position A. You can use any 6 channels of the 40 allotted to the CB Band. **You must use crystals specifically designed for your unit.** To obtain crystals, order through your local Radio Shack store. Be sure to specify the channel, Catalog Number of this Walkie-Talkie and complete description.

Do not attempt to use non-standard crystals or attempt to make any internal adjustments to your TRC-208. Such is prohibited by the DOC and may result in illegal operation—for which you may be liable and may be fined.

1. Remove the two screws at the bottom of the Case.
2. Remove the one screw at the back of the Case.
3. Remove the Case Front.
4. Insert the new matched pair of crystals into the sockets. Each crystal will be marked with the channel (1-40), transmit or receive (T or R) and frequency. Make sure the transmit (T) and receive (R) crystals are installed in their correct sockets. If the crystals are reversed, the unit will transmit on one frequency and receive on another, both of which will be outside the Citizens Band, which will result in illegal operation.



USING YOUR WALKIE-TALKIE

We've incorporated a unique design into this Transceiver: with special techniques, we've made the metal side panels into a capacitive-coupling circuit which uses your body as part of the antenna system. This increases its efficiency and thus increases your range of reliable communications.

TO RECEIVE

1. Extend Antenna fully and keep it in a vertical position.
2. Turn power "on" by rotating **VOLume** clockwise.
3. Check the Battery condition (see page 8).
4. Set **SQUELCH** control to maximum counterclockwise.
5. Set **CHANNEL Selector** to the desired channel.
6. Adjust **SQUELCH** to cut out annoying background noise when no signal is being received. To do this, set **CHANNEL Selector** to where no signals are present (or wait till signals cease on your channel). Then rotate **SQUELCH** in a clockwise direction to the point where the background noise just stops. Now, when a signal is present you will hear it, but will not be disturbed by noise on the channel in between signals.

   When properly set, **SQUELCH** will keep the receiver "dead" until a signal comes in on that channel. Do not set **SQUELCH** too high, or weak signals will not be able to "open" the Squelch circuit. To receive weak signals, it is best to leave **SQUELCH** set to the minimum position (maximum counterclockwise).
7. Adjust **VOLume** for a suitable listening level.

TO TRANSMIT

1. Extend Antenna fully and keep it in a vertical position.

   IMPORTANT: If the Antenna is not fully extended, the efficiency of the transmitter is reduced and the power amplifier transistor could be damaged.

2. Turn power "on" by rotating **VOLume** clockwise.
3. Check the Battery condition (see page 8).
4. Set **CHANNEL Selector** to desired channel of operation.
5. To Transmit, press the **Talk** button. Speak slowly and clearly in a normal voice, 2″ or 3″ 5—7.5cm from the Microphone. A built-in modulation limiter circuit allows the Microphone to adjust automatically to a wide variety of voice levels. No need to shout or speak loudly—the built-in circuitry automatically compensates for voice levels.

   If you are Transmitting only a short distance, or want to conserve battery power, set **HI/LOW** switch to the LOW position. As a courtesy on-the-air, you should always use only the required amount of power (LOW if possible), this will avoid unnecessary interference with other CBer's.

6. To Receive, release the **Talk** button.
7. To use an external/remote microphone, such as Radio Shack's 21-1172, just plug it into the 5-pin DIN **EXT MIC** Jack. Then, you can press the Push-to-Talk bar on the mic and talk there; release and listen to the sound from the Walkie-Talkie's built-in Speaker. As you will note, the built-in mic will be disconnected when you use an external mic.

   When using such an external mic, hold it 2—3″ 5—7.5cm from your mouth (hold at a slight angle—don't talk straight into it) and speak slowly at a normal voice level.

NOTE: Your Walkie-Talkie has more than adequate mic gain so a pre-amp mic is not an advantage. As a matter of fact, if you do use a pre-amp mic and set its gain too high, you can end up with audio distortion and other undesired problems. Thus, we do not recommend a pre-amp mic with this Walkie-Talkie.

OPERATING HINTS

EXTernal MICrophone Jack: You can plug a remote microphone into the 5-pin DIN **EXT MIC** jack. Use an optional microphone such as Radio Shack's 21-1172. Your Walkie-Talkie features a new locking type microphone jack. This insures that you won't accidentally pull out or loosen the plug connection (when extending the Mic cable while moving about).

SPeaker Jack: Plug an external speaker or earphone into this jack and enjoy the advantage of avoiding annoying background noise when trying to listen to weak or distant stations. When you push a plug into this jack, it automatically disconnects the internal Speaker (but not the microphone function).

Power HI-LOW Switch is for reducing the battery drain when transmitting over short distances. If the switch is set to HI, the power output is 4 watts maximum. About 30% of the current is saved if the switch is set to LOW.

External ANT Jack is for connecting an external antenna. When using an external antenna the telescopic antenna should be left collapsed within the unit.

CHG Jack is for charging Nickel Cadmium batteries (if you are using them).

PWR Jack: You can power your Walkie-Talkie from an external 12 Volt DC source (and thus conserve battery power) by using an optional AC to 12-Volt DC Power Supply such as Radio Shack's 22-124. Or, you can use our 12V DC Power Cord 270-1533 in your vehicle and power your Walkie-Talkie directly from the battery in your vehicle.

To insure maximum range, always keep fully charged batteries in the unit. As the voltage decreases it directly affects range. Use only quality batteries such as Radio Shack ENERCELLs (23-582) which will last three times longer than "regular" batteries, or Radio Shack Alkaline ENERCELLs (23-552) which will last six times longer. If you dislike those trips to the store for replacement batteries, we suggest Radio Shack Nickel Cadmium ENERCELL (23-125) rechargeable batteries. Use these together with Radio Shack's Power Supply/Charger, Catalog Number 21-516 (plugged into **CHG** jack for charging). They can be recharged up to 500 times to save your time, trips and money.

NOTE: Do not try to use 270-1533 for charging batteries (it's intended only for DC operation, not charging).

Caution: Do not attempt to operate the Transceiver when charging Ni-Cad batteries. Wait till batteries are fully charged and then operate from the batteries.

SERVICE AND MAINTENANCE

Your Transceiver has been built in accordance with Radio Shack's exacting quality control standards. However, it should be treated with reasonable care accorded any electronic equipment. Avoid exposing it to severe shock, dirt or moisture.

If you run into problems with the unit, we recommend you check the following:

1. If trouble is experienced with receiving.
   - Check batteries for weak or discharged condition. Replace or recharge if necessary.
   - Check the **OFF/VOLume** switch setting.
   - Be sure **SQUELCH** is adjusted properly. Is it over-squelched?
   - Check if the unit is switched to an active channel.
2. If trouble is experienced with transmitting.
   - Check if the antenna is fully extended for proper operation.
   - Make sure you are fully pressing the Push-to-Talk button.

If these checks don't solve the trouble, do NOT attempt repairs or adjustments yourself. The unit should be serviced only by a qualified radio service technician. Whenever possible, return the unit to the store from which it was purchased.

10-CODES

Citizens band radio operators have largely adopted the 10-code for standard questions and answers. Its use permits faster communication and better intelligibility in noisy areas. The following table lists some of the more common codes and their meanings.

Code	Meaning	Code	Meaning
10-1	Receiving poorly	10-10	Standing by
10-2	Receiving well	10-13	Advise road/weather conditions
10-3	Stop Transmitting	10-20	What is your location?
10-4	OK	10-33	Emergency traffic
10-7	Out of Service	10-36	Correct time
10-8	In Service	10-41	Switch to Channel
10-9	Repeat	10-62	Cannot copy you

WARNING

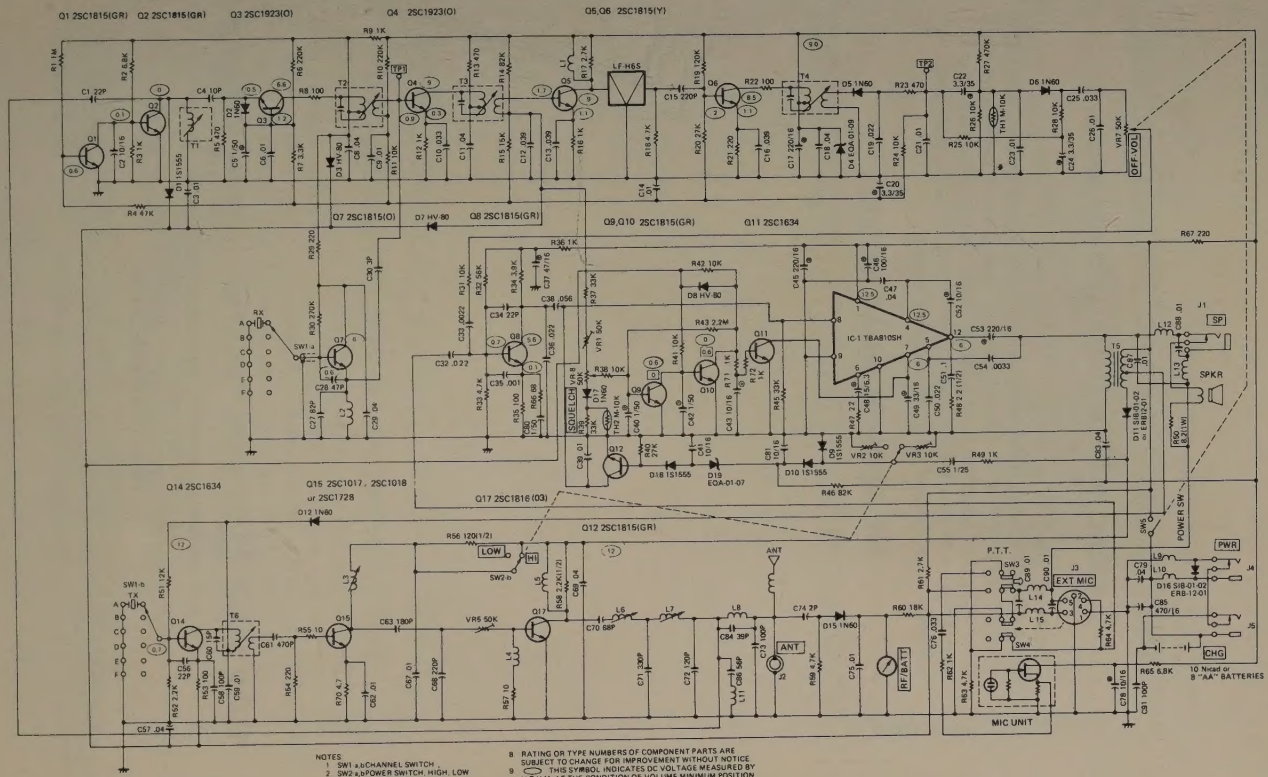
Do not open up the Transceiver to make any internal adjustments. A C.B. unit is set up to transmit a regulated signal on an assigned frequency. It is against the law to alter or adjust the settings inside the unit to exceed these limitations. Any adjustments to a C.B. rig must be made by a qualified technician using the proper test equipment.

You can have crystals added or replaced in your Transceiver as explained in the section "CHANGING OR INSTALLING NEW CRYSTALS". We can not be responsible for the proper operation of your Transceiver if you use other manufacturer's crystals; as a result, we urge you to use only crystals obtained through your local Radio Shack store.

TO BE SAFE AND SURE:

Never change or replace anything in your Transceiver other than Batteries and/or Crystals. And, to be assured of on-frequency operation, use **only** crystals obtained through your Radio Shack store.

SCHEMATIC DIAGRAM



NOTES

1. SW1 a,b CHANNEL SWITCH
2. SW2 a,b POWER SWITCH, HIGH, LOW
3. SW3 P T T SWITCH
4. SW4 EXT MIC SWITCH
5. SW5 POWER SWITCH WITH VOLUME
6. RESISTANCE VALUES IN OHMS, K 1000
7. CAPACITANCE VALUES IN μF, P μμF
8. RATING OR TYPE NUMBERS OF COMPONENT PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT NOTICE
9. THIS SYMBOL INDICATES DC VOLTAGE MEASURED BY V T V M AT THE CONDITION OF VOLUME MINIMUM POSITION AND SQUELCH CONTROL "OUT".
   THIS SYMBOL INDICATES SQUELCH CONTROL "IN"

RADIO SHACK LIMITED WARRANTY

This equipment is warranteed against defects for 90 days from date of purchase. Within this period, we will repair it without charge for parts and labour. Simply **bring your sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover equipment subjected to misuse or accidental damage.

WE SERVICE WHAT WE SELL

RADIO SHACK DIVISION, TANDY ELECTRONICS LIMITED

CANADA: BARRIE, ONTARIO L4M 4W5
U.S.A.: FORT WORTH, TEXAS 76102

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A2-4300

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Cet article est garanti contre tout défaut pour une période de 90 jours à compter de la date d'achat. Au cours de cette période, nous le réparerons sans frais de pièces et de main-d'oeuvre. Vous n'avez qu'à présenter **votre facture** à tout magasin Radio Shack afin que l'on puisse vérifier la date d'achat. La garantie ne couvre pas les frais d'expédition ni les dommages causés à l'équipement par un usage abusif ou un accident.

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